AD - AREA DRAIN LA - LABORATORY AIR AFF - ABOVE FINISH FLOOR LAV - LAVATORY EXISTING TO BE REMOVED AFG - ABOVE FINISH GRADE LBS/HR - POUNDS PER HOUR DIRECTION OF FLOW 1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, INVERTS, PIPE SIZES AND LCW - LABORATORY COLD WATER MATERIALS, FLUID FLOW DIRECTION(S) AND CONDITIONS AT THE SITE AND REPORT ANY AG - AIR GAP DOMESTIC COLD WATER, COLD WATER DISCREPANCIES TO THE ENGINEER PRIOR TO BEGINNING INSTALLATION OR FABRICATION ANCHOR AP - ACCESS PANEL LHW - LABORATORY HOT WATER WORK. (DO NOT SCALE DRAWINGS). AS - AUTOMATIC SPRINKLER LHWR - LABORATORY HOT WATER RETURN DOMESTIC HOT WATER, HOT WATER REDUCER OR INCREASER ASD - ADJUSTABLE SPEED DRIVES LNG - LIQUID NATURAL GAS 2. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES EVEN IF THE ASD - AUTOMATIC SPRINKLER DRAIN LOX - LIQUID OXYGEN DOMESTIC HOW WATER RETURN, HOT WATER RETURN ECCENTRIC REDUCER UTILITIES ARE NOT SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL REPAIR ALL ASHRAE - AMERICAN SOCIETY HEATING, LV - LABORATORY VACUUM DAMAGES AT THEIR OWN EXPENSE AND WILL BE RESPONSIBLE FOR ANY ADDITIONAL LW - LABORATORY WASTE REFRIGERATION, AIR CONDITIONING ENGINEERS MEDICAL AIR TOP CONNECTION, 45° OR 90° — ма —— DAMAGES CAUSED BY A SYSTEM BEING DOWN. LWV - LABORATORY WASTE VENT ASME - AMERICAN SOCIETY MECHANICAL ENGINEERS ASPE - AMERICAN SOCIETY PLUMBING ENGINEERS COMPRESSED AIR BOTTOM CONNECTION, 45° OR 90° 3. THIS INSTALLATION WILL CONFORM TO ALL CODES AND THE REQUIREMENTS OF FEDERAL, ASR - AUTOMATIC SPRINKLER RISER M - METER STATE, AND LOCAL REGULATORY AGENCIES HAVING JURISDICTION. AV - ACID VENT MEDICAL VACUUM — MV — MV — MA - MEDICAL AIR SIDE CONNECTION AW - ACID WASTE MAV - MANUAL AIR VENT 4. INSTALL ALL PRODUCTS IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS, LABORATORY AIR — LA ——— LA — CAPPED OUTLET MBH - 1000 BTUH CONTRACT DOCUMENTS AND THE APPLICABLE CODES, STANDARDS AND REGULATIONS. MED - MEDICAL BFP - PRESSURE BACKFLOW PREVENTER LABORATORY VACUUM — LV ——— LV —— MER - MECHANICAL EQUIPMENT ROOM RISE OR DROP IN PIPE 5. THE CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THAT ALL RULES AND REGULATIONS, BHP - BREAK HORSEPOWER BSP - BLACK STEEL PIPE MH - MANHOLE INCLUDING THOSE WHICH MAY BE ISSUED BY THE OWNER, ARE BEING OBSERVED, INDUSTRIAL AIR --- IA ----- IA ---UNION MOU - MEMORANDUM OF UNDERSTADING PARTICULARLY WORKPLACE SAFETY AND THE CONDUCT OF ALL THOSE EMPLOYED DIRECTLY BT - BATHTUB MSB - MOP SERVICE BASIN BTU - BRITISH THERMAL UNIT AND INDIRECTLY BY HIM ON THE PREMISES, AND THE OWNER'S EMPLOYEES WHO MAY BE — D — — D — PIPE UP MV - MEDICAL VACUUM BTUH - BRITISH THERMAL UNIT PER HOUR IMPACTED OR AFFECTED BY CONSTRUCTION ACTIVITIES. THE CONTRACTOR WILL INSTALL SIGNAGE, TEMPORARY FENCES, BARRIERS, AND OTHER MEANS TO PROVIDE WARNING AND SANITARY SEWER —— SAN ———— SAN —— PIPE DOWN PERSONNEL SAFETY. PLACEMENT OF THESE ITEMS WILL BE COORDINATED WITH THE OWNER (N) - NFW, NFW WORK C - CELSIUS AND HIS ONGOING OPERATIONS AND WILL PROMPTLY BE REVISED WHEN WORK IN A SANITARY SEWER (OPTIONAL) POINT OF CONNECTION TO EXISTING WORK CGA - COMPRESSED GAS ASSOCIATION N2 - NITROGEN PARTICULAR AREA HAS BEEN COMPLETED. N2O - NITROUS OXIDE CI - CAST IRON SANITARY SEWER, BELOW GRADE —— SAN — — — SAN — LIMIT OF DEMOLITION NC - NORMALLY CLOSED CO - CLEANOUT 6. ALL WORK WILL BE LAWFULLY EXECUTED IN A NEAT AND WORKMANLIKE MANNER AND WILL BE NG - NATURAL GAS CS - CLINICAL SINK DONE IN ACCORDANCE WITH THE GOVERNING CODES, INDUSTRY STANDARDS AND IN SANITARY VENT NIC - NOT IN CONTRACT STRAINER CV - CONTROL VALVE CONFORMANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS. NO - NORMALLY OPEN STORM WATER — SD — SD — NOM - NOMINAL THERMOMETER 7. WORK UNDER THIS CONTRACT SHALL CONSIST OF THE CONTRACTOR PROVIDING ALL LABOR, (D) - DEMOLISH AND REMOVE NPW - NON POTABLE WATER MATERIALS, AND SERVICES, INCLUDING WORK NOT SPECIFICALLY SHOWN BUT REASONABLY STORM WATER, BELOW GRADE — SD — — SD — DCW - DOMESTIC COLD WATER NTC - NOT TO SCALE PRESSURE GAGE DHW - DOMESTIC HOT WATER PERIMETER OR UNDERSLAB DRAIN TILE — DT — — DT — FLOW ELEMENT **DHWR - DOMESTIC HOT WATER RETURN** 8. WORK ALL DRAWINGS WITH THE PROJECT SPECIFICATIONS. DHWS - DOMESTIC HOT WATER SUPPLY O2 - OXYGEN SOFTEN COLD WATER DI - DEIONIZED WATER OC - ON CENTER co O-----CLEAN OUT 9. PIPING SHOWN ON RESPECTIVE PLANS SERVES FIXTURES AND EQUIPMENT ON THAT FLOOR OD - OUTSIDE DIAMETER DN - DOWN UNLESS OTHERWISE NOTED. FILTERED COLD WATER ——FCW———FCW— HOSE BIB DOE - DEPARTMENT OF ENERGY OFD - OVERFLOW DRAIN OR - OPERATING ROOM DS - DOWNSPOUT 10. PIPING RISING WITHIN A STORY IS DESIGNATED AS "RISE". PIPING RISING TO ANOTHER STORY REVERSE OSMOSIS WATER SUPPLY DT - DRAIN TILE OVFL - OVERFLOW IS NOTED AS "UP". PIPING DROPPING WITHIN A STORY IS NOTED AS "DROP". PIPING DROPPING DW - DISHWASHER TO ANOTHER STORY IS NOTED AS "DN". REVERSE OSMOSIS WATER RETURN DWG - DRAWING PA - PASCAL DWH - DOMESTIC WATER HEATER 11. COMPLETE LAYOUT DRAWINGS SHALL BE REQUIRED BY SPECIFICATIONS PARAGRAPH, TEMPERED WATER SUPPLY PD - PRESSURE DROP OR DIFFERENCE DWR - DRINKING WATER RETURN SUBMITTALS. CONSTRUCTION WORK SHALL NOT START ON ANY SYSTEM UNTIL THE LAYOUT PDI - PLUMBING AND DRAINAGE INSTITUTE DWS - DRINKING WATER SUPPLY DRAWINGS HAVE BEEN APPROVED. TEMPERED WATER RETURN PG - PRESSURE GAGE DWV - DRAIN WASTE VENT PP - PLUMBING PUMP NITROUS OXIDE PPM - PARTS PER MILLION **PLUMBING NOTES** (E) - EXISTING TO REMAIN PRS - PRESSURE REDUCING STATION OXYGEN PRV - PRESSURE REDUCING VALVE EL - ELEVATION 1. ALL PIPING MATERIALS AND COMPONENTS INCLUDING FITTINGS, PIPE, FLANGES, VALVES, ETC. EMCS - ENERGY MONOSERRAT AND CENTRAL SYSTEM PSI - POUNDS PER SQUARE INCH SHALL BE DESIGNATED, FABRICATED AND INSTALLED PER THE APPROPRIATE SECTIONS OF **EPA - ENVIROMENTAL PROTECTION AGENCY** PSIA - POUNDS PER SQUARE INCH ATMOSPHERE THE LATEST CODES, VETERAN'S AFFAIRS PLUMBING STANDARDS AND PROJECT CONTRACT EPACT - ENERGY POLICY ACT PSIG - POUNDS PER SQUARE INCH GAUGE LIQUEFIED PETROLEUM (LP) GAS PTRV - PRESSURE TEMPERATURE RELIEF VALVE ESC - ESCUTCHEON **ESH - EMERGENCY SHOWER** PW - POTABLE WATER 2. ALL SANITARY SEWERS 2" AND SMALLER SHALL SLOPE 1/4" PER FOOT (MIN), ALL SANITARY — NG — NG — ET - EXPANSION TANK SEWERS 3" AND LARGER SHALL SLOPE 1/8" PER FOOT (MIN.) IN THE DIRECTION OF FLOW. **EWC - ELECTRIC WATER COOLER** --- NG ---- NG --- NATURAL GAS, BELOW GRADE RD - ROOF DRAIN **EWC - ELECTRIC WATER COOLER** 3. ALL HORIZONTALLY ROUTED WASTE VENTS SHALL BE INSTALLED WITH A SLOPE TO FACILITATE RDL - ROOF DRAIN LEADER EWH - ELECTRIC WATER HEATER GRAVITY DRAINAGE TO THE WASTE SYSTEM. — LW — LW — LABORATORY WASTE RL - ROOF LEADER EWS - EYE WASH STATION **RO - REVERSE OSMOSIS WATER** EX - EXISTING 4. ALL CLEANOUTS INSTALLED IN THE SEWER SYSTEM SHALL BE SIZED AS FOLLOWS: — LW — — LW — LABORATORY WASTE BELOW GRADE RWL - RAIN WATER LEADER SIZE OF CLEANOUT -LWV----- LABORATORY WASTE VENT F - FAHRENHEI 2 1/2" SAN - SANITARY SEWER FCO - FLOOR CLEANOUT SMACNA - SHEET METAL AND AIR CONDITIONING FCW - FILTERED COLD WATER CONTRACTORS NATIONAL ASSOCIATION FD - FLOOR DRAIN SCFM - STANDARD CUBIC FOOT/MINUTE FDC - FIRE DEPARTMENT (HOSE) CONNECTION 5. CLEANOUTS INSTALLED IN HORIZONTAL DRAINAGE PIPING SHALL BE SPACED AT INTERVALS SCW - SOFTENED COLD WATER FIN - FINISH NOT EXCEEDING 100'. SD - STORM DRAIN FL - FLOOR SDMH - STORM DRAIN MANHOLE FM - FLOW METER 6. THE MAXIMUM VERTICAL DISTANCE FROM THE FIXTURE OUTLET (LAVATORY, FLOOR DRAIN SP - SUMP PUMP FOP - FUEL OIL PUMP ETC.) TO THE TRAP WEIR SHALL BE 24". SPR - SPRINKLER LINE FOR - FUEL OIL RETURN SQFT - SQUARE FEET FOS - FUEL OIL SUPPLY 7. SURFACES TO BE SOLDERED SHALL BE CLEANED BRIGHT. THE JOINTS SHALL BE PROPERLY PLUMBING VALVE SYMBOLS DRAWING SYMBOLS SS - STAINLESS STEEL FOV - FUEL OIL VENT FLUXED AND MADE WITH APPROVED SOLDER. SOLDER JOINTS FOR POTABLE WATER SHALL BE ST - STORAGE TANK FS - FLOOR SINK MADE WITH A SOLDER CONTAINING NOT MORE THAN 0.2 PERCENT LEAD. SW - STORM WATER FS - FLOW SWITCH FU - FIXTURE UNITS BALANCING VALVE KEY NOTE SYMBOL 8. UNIONS SHALL BE INSTALLED AT ALL EQUIPMENT. THE USE OF DIELECTRIC UNIONS AND FLANGES MUST BE INSTALLED IN AREAS WHERE JOINING OF DISSIMILAR METALS (ie CARBON TCV - TEMPERATURE CONTROL VALVE GATE VALVE (ISOLATION VALVE) STEEL TO COPPER OR BRONZE, ETC.) THIS IS TO FACILITATE PIPING REMOVAL AND TD - TEMPERATURE DIFFERENCE GAL - GALLON MULTIPLE KEY NOTES APPLYING TO THE SAME ITEM REASSEMBLY FOR FUTURE MAINTENANCE WORK AND/OR PREVENT GALVANIC CORROSION. TD - TRENCH DRAIN GCO - GRADE CLEANOUTS  $\longrightarrow$ ISOLATION VALVE WITH 3/4 " HOSE ADAPTER TDH - TOTAL DYNAMIC HEAD GPD - GALLONS PER DAY 9. CONTRACTOR SHALL PROPERLY BRACE, ANCHOR, AND SUPPORT ALL PIPING, VALVES ETC. IN TEMP - TEMPERATURE GPH - GALLONS PER HOUR CHECK VALVE ACCORDANCE WITH MSS SP-58. TMV - THERMOSTATIC MIXING VALVE GPM - GALLONS PER MINUTE TP - TRAP PRIMER GPR - GAS PRESSURE REGULATOR DETAIL NUMBER 10. PIPE SUPPORT SPACING SHALL BE IN ACCORDANCE WITH MSS-58. TSTAT - THERMOSTAT ANGLE GLOBE VALVE GRS - GAS REGULATOR STATION TWR - TEMPERED WATER RETURN GT - GREASE TRAP ∖xxx / <del>-</del> - DRAWING NUMBER WHERE DRAWN 11. ALL POTABLE WATER BRANCHES SHALL BE INSTALLED WITH ISOLATION VALVES CLOSE TO TWS - TEMPERED WATER SUPPLY GVTR - GAS VENT THROUGH ROOF **BUTTERFLY VALVE** TYP - TYPICAL GWH - GAS FIRED WATER HEATER 12. ALL PLUMBING FIXTURES SHALL BE PROVIDED WITH WATER ISOLATION VALVES. BALL VALVE SECTION LETTER UPC - UNIFORM PLUMBING CODE H&CW - HOT AND COLD WATER 13. CONTRACTOR SHALL PROVIDE WALL ACCESS COVERS TO ALL CLEANOUTS AND VALVES HB - HOSE BIBB UR - URINAL — DRAWING NUMBER WHERE SHOWN \xxx / MODULATING CONTROL VALVE LOCATED WITHIN WALLS. HD - HUB DRAIN HEX - HEAT EXCHANGER V - VENT TWO POSITION CONTROL VALVE 14. ALL WATER SUPPLY AND DRAIN PIPES UNDER LAVATORIES SHALL BE PROTECTED IN HP - HORSEPOWER VAC - VACUUM ACCORDANCE WITH VETERAN'S AFFAIRS STANDARDS. HS - HAND SINK - BUILDING NO. WHERE EQUIPMENT IS LOCATED. VB - VACUUM BREAKER HST - HOT WATER STORAGE TANK (DOMESTIC) THREE-WAY MODULATING CONTROL VALVE - EQUIPMENT ABBREVIATION (PUMP) VCO - VACUUM CLEANER OUTLET 15. ALL PIPES OR TUBING WHICH PASS THROUGH RATED AND NON-RATED WALLS, FLOORS AND HWB - HOT WATER BOILER VP - VACUUM PUMP FOUNDATION WALLS, SHALL PASS THROUGH A SCHEDULE 40 CARBON STEEL PIPE SLEEVE. HWCP - HOT WATER CIRCULATING PUMP PUMP NO. 3 IN BUILDING NO. 26 26-P 3 VS - VENT STACK SLEEVES WHICH PASS THROUGH MASONRY SHALL BE GALVANIZED COATED. ALL SLEEVES HWP - HOT WATER PUMP VTR - VENT THROUGH ROOF SHALL BE INSTALLED FLUSH ON BOTH SIDES OF WALL PENETRATION. THREE-WAY TWO POSITION CONTROL VALVE HYD - HYDRANT TYPICAL UNIT NO. NON-RATED WALLS: THE SLEEVE SHALL BE SIZED TO ALLOW FREE PASSAGE OF INSULATED AND NON-INSULATED PIPES AND TUBING. W - WASTE RATED WALLS: PIPES WHICH PASS THROUGH FIRE-RATED WALLS & FLOOR SHALL USE ICW - INDUSTRIAL COLD WATER PRESSURE REGULATING VALVE WC - WATER CLOSET THE APPROPRIATE CODE APPROVED, TESTED AND INSTALLATION METHOD OF SEALING INV - INVFRT — PIPE SYSTEM WCO - WALL CLEANOUT WHILE MAINTAINING THE INTEGRITY OF THE WALL'S FIRE RATING(S). IPC - INTERNATIONAL PLUMBING CODE WG - WATER GAGE IRW - IRRIGATION WATER EXTENSION WALLS & FOUNDATION: PIPES WHICH PASS THROUGH EXTENSION WALLS OR - RISER NUMBER AUTOMATIC FLOW CONTROL VALVE WH - WALL HYDRANT FOUNDATION WALLS SHALL BE SEALED AND MADE WEATHER-TIGHT. IW - INDIRECT WASTE WH - WATER HEATER IWH - INSTANTANEOUS WATER HEATER WHA - WATER HAMMER ARRESTER 16. INSULATE COLD AND HOT WATER PIPING PER THE PROJECT DOCUMENTS WITH FIRE IWR - INDUSTRIAL WATER RETURN PRESSURE RELIEF VALVE WL - WATER LINE RETARDANT VAPOR BARRIER JACKET. PIPE INSULATION SHALL BE SEALED WITH A FIRE IWS - INDUSTRIAL WATER SUPPLY WM - WATER METER RESISTIVE ADHESIVE. WPD - WATER PRESSURE DROP KW - KILOWATT WS - WASTE STACK MANUAL AIR VENT 17. CONTRACTOR IS RESPONSIBLE FOR ALL TESTING AND COORDINATION OF INSPECTIONS OF KWHR - KILOWATT-HOUR THE ENTIRE POTABLE WATER, SANITARY SEWER AND VENT SYSTEMS. TESTING SHALL BE IN ACCORDANCE WITH THE VETERAN'S AFFAIRS STANDARDS AND THE INTERNATIONAL PLUMBING YCO - YARD CLEANOUT TEST PLUG (PRESSURE/TEMPERATURE) YH - YARD HYDRANT 18. ALL PIPING AND VALVES SHALL BE PROPERLY IDENTIFIED, LABELED AND TAGGED. AUTOMATIC AIR VENT 19. CONTRACTOR SHALL FLUSH AND DISINFECT THE ENTIRE POTABLE WATER SYSTEM, FLUSHING AND DISINFECTION OF THE POTABLE WATER SYSTEM SHALL BE IN ACCORDANCE WITH THE VETERAN'S AFFAIRS STANDARDS AND THE INTERNATIONAL PLUMBING CODE. **BACKFLOW PREVENTER** ALL SYMBOLS AND ABBREVIATIONS MAY 20. PROVIDE THREE (3) ELBOW SWING JOINTS FOR ALL DOMESTIC HOT WATER CONNECTIONS TO NOT BE INDICATED ON THE DRAWINGS. THE MAIN. 21. CONTRACTOR SHALL PROVIDE AND INSTALL THERMAL EXPANSION/CONTRACTION COMPENSATION IN THE DOMESTIC HOT WATER AND RECIRCULATION SYSTEMS. LIMITING THE MAXIMUM MOVEMENT TO 1 1/2" OR LESS. ANCHORS & RESTRAINTS SHALL BE INSTALLED WHERE NECESSARY AND ADJACENT FIRE RATED WALLS AND FLOORS. ALL PIPES SHALL BE PROPERLY GUIDED INTO THE THERMAL EXPANSION LOOPS OR COMPENSATORS. 100% CONSTRUCTION DOCUMENTS **FULLY SPRINKLERED** CONSULTANTS: ARCHITECT / ENGINEERS: MILLER-REMICK LLC **RENOVATE SURGICAL** PLUMBING GENERAL NOTES, SYMBOLS Office of PROFESSIONAL ENGINEER 581-13-101 **SERVICE & UPGRADE** AND ABBRVIATIONS Construction **Building Number** PF&A DESIGN **OPERATING ROOMS** ARCHITECTURE, PLANNING, INTERIORS Miller-Remick LLC and Facilities World Trade Center M.E.P. & Structural Engineering 101 West Main Street, Suite 7000 Approved: Medical Center Director Location HUNTINGTON, WV A Service Disabled Veteran Owned Drawing Number Management Norfolk, VA 23510 SDVOSB 2 14634 STATE OF Phone: 757-471-0537 1010 KINGS HIGHWAY SOUTH CHERRY HILL, NEW JERSEY 08034 Fax: 757-471-4205 PHONE: (856)429-4000 Checked www.pfa-architect.com FAX: (856)429-5002 **D**epartment of Veterans Affairs 01-15-2016 DATE DESCRIPTION VA FORM 08-6231

GENERAL PLUMBING SYMBOLS

DIRECTION OF PIPE PITCH (DOWN)

**GENERAL NOTES** 

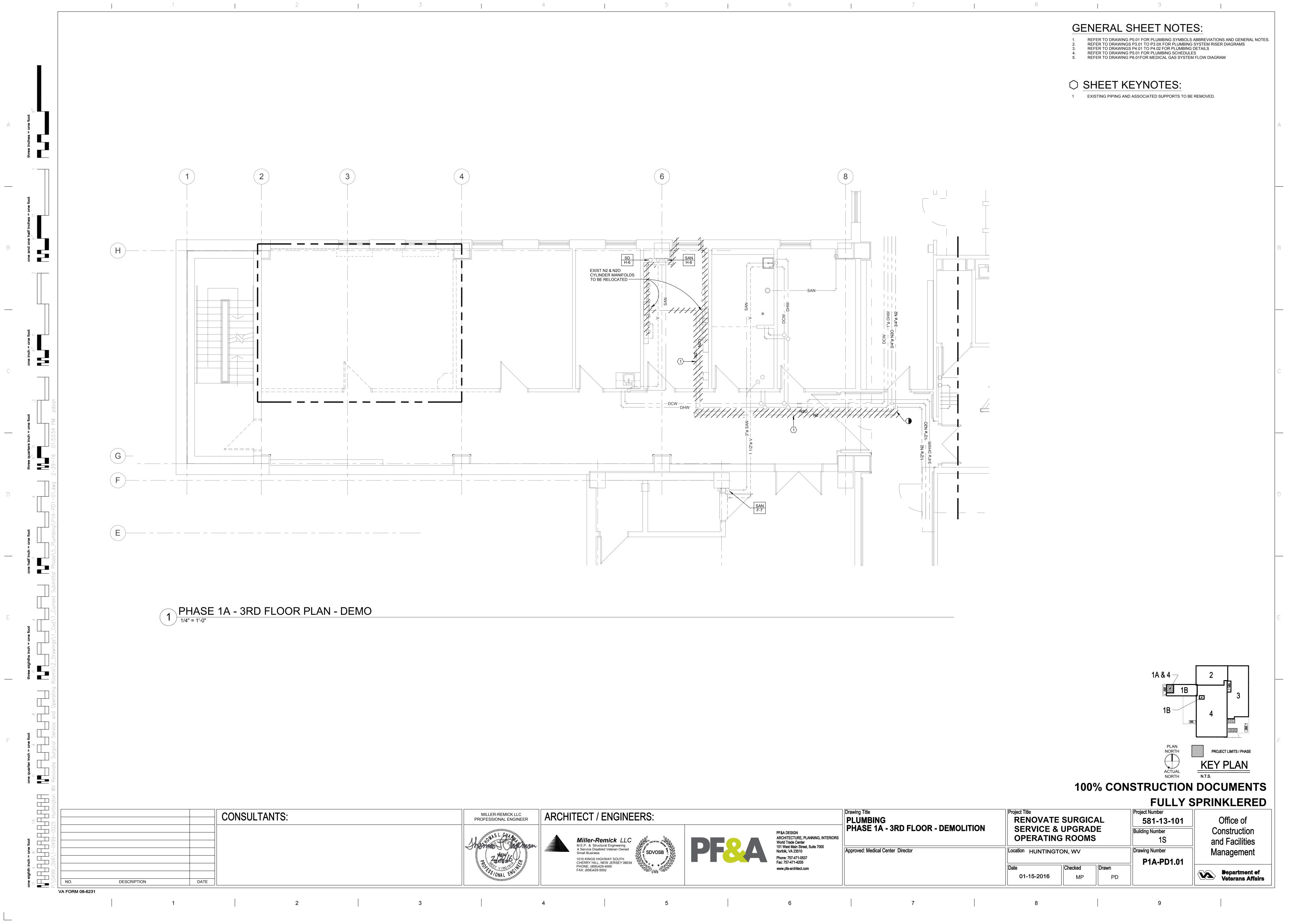
PLUMBING PIPING SYMBOLS

—— – – — EXISTING TO REMAIN

PLUMBING ABBREVIATIONS

L/S - LITER PER SECOND

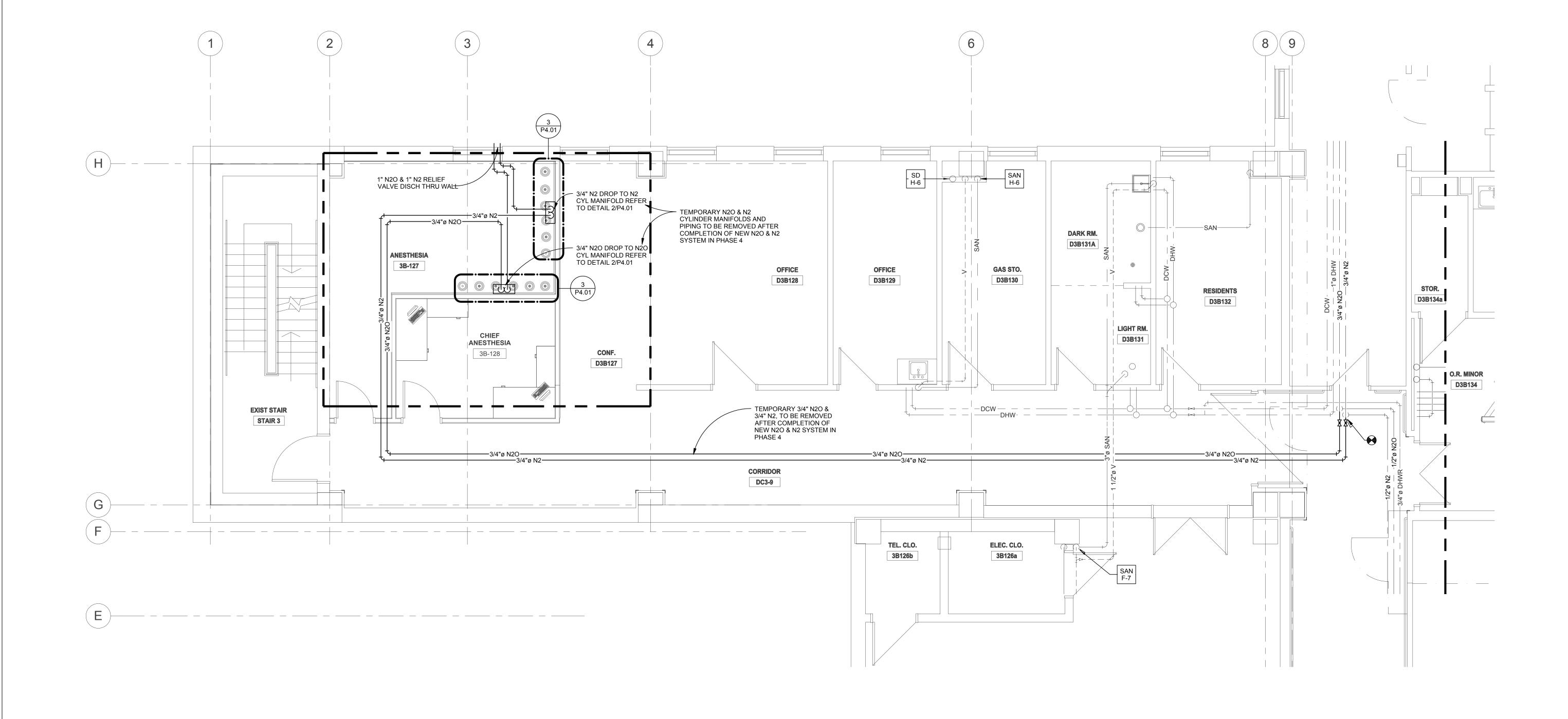
A/E - ARCHITECT / ENGINEER



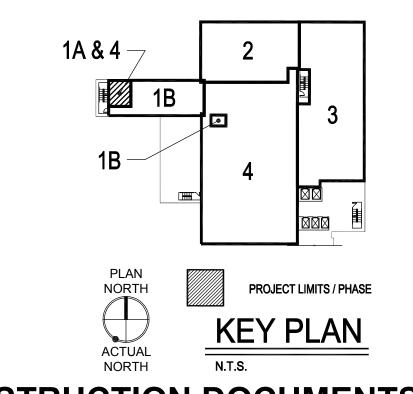


REFER TO DRAWINGS P4.01 TO P4.02 FOR PLUMBING DETAILS

REFER TO DRAWING P5.01 FOR PLUMBING SCHEDULES
REFER TO DRAWING P6.01FOR MEDICAL GAS SYSTEM FLOW DIAGRAM



1 PHASE 1A - 3RD FLOOR PLAN - NEW WORK



## 100% CONSTRUCTION DOCUMENTS

